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EXAMINER

KRSCIUNAS, LINDA MARY

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,226

Applicant(s)

WEIGELT ET AL.

Examiner

Linda Krisciunas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 22-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 22-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Non-Final Office Action in response to the applicant's Request for Continued Examination (RCE) filed April 25, 2006. Claims 1-12 and 22-34 are pending.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 21, 2006 has been entered.

Response to Amendment

2. The Examiner notes the submission on a replacement paragraph for paragraph 32 in the Specification.

Response to Arguments

3. The Examiner has fully considered the Applicant's arguments with respect to the 35 USC 101 rejection and withdraws the rejection.

With respect to claims 1, 22 and 28, the Examiner has fully considered the Applicant's arguments and they are deemed moot in light of the new art rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of "code for constructing the generic revenue management data model" is not enabled by the Specification and is considered new matter.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 4-5, 10-12, 22, and 25-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Hammann (US 2002/0055865).

As per claims 1, 12, 22 and 28, Hammann teaches a first data structure comprising code for constructing the generic revenue management data model on a tangible storage medium such that the generic revenue management data model comprises (paragraph 38: "The yield management system includes a processor connected to the storage device and controlled by the program. The processor operative with the program determines transaction parameter values for composite

resources having at least one human-factor resource which includes an offer price calculated using yield management techniques, and communicates the transaction parameter values for at least one composite resource to at least one user." Where the computer program would inherently contain code.): a data structure storing a representation of one or more network demands, each of which forecasts a number of requests expected for an item or a combination of items in the network (paragraph 136: demand records list (34)); a second structure for storing a representation of one or more network resources, wherein each network resource has at least one attribute for measuring an ability to contribute to a satisfaction of the one or more network demands (paragraph 136: resource list (32)); a third structure for storing a representation of one or more resource bundles, wherein each resource bundle represents a single resource or group of resources residing in the second data structure and wherein the group of resources are combinable to form a product or service (paragraph 136: composite resource list (33)); and a fourth structure for storing a representation of associations between the one or more resource bundles and the one or more network demands (paragraph 138, where the schedule represents the association between the resource list, composite resource list and demand records and a representation is displayed in Figure 4 where the resources of rooms are associated with the demands (cases) according to a schedule.), wherein the first data structure is associated with the third data structure via the fourth data structure (As previously noted, Figure 4 displays the association between the demand (as indicated by the cases) for rooms by associating the respective room resources with the respective demand.); and code for mapping

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revenue management problem data to the tangible storage medium according to the generic revenue management data model (paragraph 38: "The yield management system includes a processor connected to the storage device and controlled by the program. The processor operative with the program determines transaction parameter values for composite resources having at least one human-factor resource which includes an offer price calculated using yield management techniques, and communicates the transaction parameter values for at least one composite resource to at least one user." Where the computer program would inherently contain code.).

With respect to the limitation of claim 28 for mapping the data to the database, the Specification does not expand upon the definition of this function and the Examiner is interpreting it to be a means of sending the data to the database for storage. Hammann teaches sending data to a database for storage (paragraph 32: "system includes memory storing the data related to the individual resources and the associated composite resources, the internal data structures, and at least one program for controlling the at least one processor." Where having memory for storing data would constitute a database.).

As per claim 2, Hammann teaches each association residing in the fourth data structure associates a resource bundle residing in the third data structure to a network demand residing in the first data structure (paragraph 138, where the schedule represents the association between the resource list, composite resource list and demand records and a representation is displayed in Figure 4 where the resources of rooms are associated with the demands (cases) according to a schedule.).

As per claims 4 and 25, Hammann teaches for each association, a representation of optimal quantity and optimal price (paragraphs 145-146, where optimization functions are utilized with supply and demand components and the values are expressed in dollars for demand and capacity unit for supply. This is equivalent to providing an optimal price and quantity as it performs an identical function in substantially the same manner with substantially the same results.).

As per claim 5, Hammann teaches the network is an airline network (yield management is utilized in the airline industry as indicated in paragraph 9, 29 and 184.).

As per claims 10-11 and 26, Hammann teaches the fifth data structure represents a resource demand (paragraph 142, where the demand records list (34) contains demand records (46) and stores the demand forecast for the composite resource. This is equivalent to a fifth data structure that represent demand as it performs an identical function in substantially the same manner with substantially the same results.

As per claim 27, Hammann teaches generating the resource demand with a network optimization (paragraphs 145-146, where optimization functions are utilized with supply and demand components and the values are expressed in dollars for demand and capacity unit for supply. This is equivalent to providing an optimal price and quantity as it performs an identical function in substantially the same manner with substantially the same results).

As per claim 29, Hammann teaches the generic revenue management data model allows data for multifarious revenue management problems in the network to be

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expressed in a uniform format (paragraph 146: "The basic control structure used to iteratively determine marginal values is identical regardless of the optimization function employed. This generic control structure is shown in FIGS. 7 and 8. A supply-demand balance optimization function is depicted in FIGS. 6 through 11B. An EMRR optimization function is depicted in FIGS. 12 through 15. The iterative section common to both optimization functions will now be described.").

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 6-9, 23-24 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammann (US 2002/0055865) in view of Talluri (US 6,263,315).

As per claims 3 and 24, Hammann does not explicitly teach maximum, physical and expected use capacity. Talluri teaches that it is known to provide, for each network resource, a representation of the maximum capacity of the network resource (The specification defines network resource as a representation of all flight legs that an airline offers in paragraph 30. Talluri teaches a reservation booking system, see Figure 4. A reservation booking system would contain a list of all flights offered.), physical capacity of the network resource (See Figure 4: maximum number of seats. See also Figure 4 (206) maximum authorized capacity for itinerary) and expected use capacity of the network resources (column 5, lines 53-58, where expected use of the resources would

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equivalent to the reservation yield and the database maintaining historical records of all the reservations as it performs an identical function in substantially the same manner with substantially the same results.). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the capacity features of Talluri to provide a means for measuring the resources and effectively utilizing them to meet demand.

As per claim 6 and 23, Hammond does not explicitly teach itinerary and fare class demand. Talluri teaches that it is known that one or more network demands further comprise: at least one itinerary demand (column 5, line 61) and at least one fare class demand for one or more flights in the airline network (column 7, line 57). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the demand-types feature of Talluri to provide a means for segregating the types of demands and in turn better servicing those demands with the appropriate resources.

As per claim 7, Hammann does not explicitly teach a seat on a flight leg. Talluri teaches that it is known that a network resource includes a seat on a flight leg (column 5, line 65). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the

flight leg feature of Talluri to provide a means for segregating the types of demands and in turn better servicing those demands with the appropriate resources.

As per claim 8, Hammann does not explicitly teach an origin to destination itinerary. Talluri teaches that it is known the resource bundle linked to the network resource includes an origin to destination itinerary (claim 5: "trip to selected destination"). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the demand-types feature of Talluri to provide a means for segregating the types of demands and in turn better servicing those demands with the appropriate resources.

As per claim 9, Hammann does teach associating the fourth data structure to the resource data in the third data structure with the demand in the first data structure (paragraph 138, where the schedule represents the association between the resource list, composite resource list and demand records and a representation is displayed in Figure 4 where the resources of rooms are associated with the demands (cases) according to a schedule). Hammann does not explicitly teach the terms destination itinerary. Talluri teaches an association with the origin to destination itinerary with an itinerary demand (column 5, lines 46-56, where the reservation system (16) is making origin to destination itineraries). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the itinerary feature of Talluri to provide a means for segregating the

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types of demands and in turn better servicing those demands with the appropriate resources.

As per claim 30, Hammann does not explicitly teach applying one or more revenue management programs to the data. Talluri teaches that it is known to apply one or more revenue management programs to the revenue management problem data stored in the generic revenue management data model to derive an optimal network-wide solution for the network (column 5, lines 4-16 where the system is capable of mimicking the decisions of nested allocation and traditional bid price controls which are equivalent to one or more revenue management programs as it performs an identical function in substantially the same manner with substantially the same results.). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the various revenue management program feature of Talluri to provide a means for utilizing the data with various programs as a means to provide benchmark-type data which allows verification of the results provided.

As per claim 31, Hammann does not explicitly teach splitting the revenue data from the optimization data. Talluri teaches that it is known to split problem information into the revenue management problem data and optimization sequence data (column 5, lines 11-16); and based on the optimization sequence data, applying one or more revenue management programs to the revenue management problem data stored in the generic revenue management data model to derive an optimal network-wide solution for

the network (column 5, lines 4-16 where the system is capable of mimicking the decisions of nested allocation and traditional bid price controls which are equivalent to one or more revenue management programs as it performs an identical function in substantially the same manner with substantially the same results). Talluri is an analogous art as it also teaches about revenue or yield management. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the yield management system of Hammann with the splitting of revenue and optimization data feature of Talluri to provide a means for segregating the utilization of the system such that one portion focus on optimization and the other on revenue.

10. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammann (US 2002/0055865) in view of Talluri (US 6,263,315) in further view of Baiada et al (US 6,721,714).

As per claim 32, Hammann does not explicitly teach the affect on resources. Baiada teaches that it is known to decompose the network to determine how the optimal network-wide solution affects individual local resources (See Figure 8 which contains a flow chart of how the airline management system functions and how the various resources are affected and how they effect the optimization of the system). Baiada is an analogous art as it also teaches about management and optimization of an airline. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the management system of Hammann with the impact on resources feature of Baiada to provide a more comprehensive and efficient system since it alerts

the user to the impact decisions will have on resources as well as revenue and allows the user visibility to pick the best decision considering all the criteria.

As per claim 33, Hammann does not explicitly teach representing demand on individual resources. Baiada teaches that it is known that a generic revenue management data model further comprises a fifth data structure for storing a representation of demands placed on the individual local resources (column 4, lines 28-41, where Baiada teaches to take into consideration a wide array of parameters and factors including resources such as ground services, gate availability, cargo etc. See Figure 8 which depicts a flow chart of how the various resources are integrated in the system.). Baiada is an analogous art as it also teaches about management and optimization of an airline. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the management system of Hammann with the demand on individual resources feature of Baiada to provide a more comprehensive and user-friendly system since it alerts the user to the impact on resources and allows the user visibility to individual resource demands.

As per claim 34, Hammann teaches applying at least one revenue management program to the revenue management problem data stored in the generic revenue management data model to derive one or more locally optimal solutions (paragraph 146: "The basic control structure used to iteratively determine marginal values is identical regardless of the optimization function employed. This generic control structure is shown in FIGS. 7 and 8. A supply-demand balance optimization function is depicted in FIGS. 6 through 11B. An EMRR optimization function is depicted in FIGS.

12 through 15. The iterative section common to both optimization functions will now be described", and paragraphs 145-146, where optimization functions are utilized with supply and demand components and the values are expressed in dollars for demand and capacity unit for supply. This is equivalent to providing an optimal price and quantity as it performs an identical function in substantially the same manner with substantially the same results).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art also teaches about yield or revenue management: Phillips et al (US 2002/0120492), Scipioni (US 6,336,097), Kalyan et al (US 6,826,538), Andres et al (US 2002/0072999), DeMarcken et al (US 2002/0133382), Boyle et al (US 2003/0208436), Hornick et al (US 5,255,184), Campbell et al (US 5,918,209), "Descartes Offers Breakthrough Revenue Management and CRM Capabilities for consumer Direct and B2B Operations", Business Wire, April 17, 2000; "A Continuous-Time Yield Management Model with Multiple Prices and Reversible Price Changes" by Feng et al, Management Science, May 2000, vol 46, no 5, pg 644-657; "OpenTable.com launches OTAdmin; First Full-Service Solution for Corporate Assistants Offers Online access to Restaurant Reservations Nationwide", Business Wire, August 16, 2000; "A Case Study of Singapore Airlines" by Melvin Lim, 1996, web.singnet.com.sg/~ciminfot/rsch.htm; "Xchange Inc Reports Record Revenue and Earnings for Q1 2000; Pro Forma Operating Income up 460 percent over Q1 1999", PR Newswire, April 24, 2000; "Rapt Leads Market in delivering First Solution for Dynamic

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Commerce Management", PR Newswire, August 30, 2000; "Perishable-asset revenue management: Generic and multiple-price yield management with diversion", by Bodily et al, Omega, April 1995, vol 23, iss2; and "An analysis of bid-price controls for Network Revenue Management" by Talluri et al, Management Science, vol 44, no 11, November 1998.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Krisciunas whose telephone number is 571-272-6931. The examiner can normally be reached on Monday through Friday, 6:30 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMK



May 3, 2006



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